

### **REMARKS/ARGUMENTS**

Reconsideration of this application is requested. Claims 1-9 will be pending in the application subsequent to entry of this Amendment.

#### **Response to Rejections Under 35 USC §112, Paragraph 2**

Claims 4 and 6 have been rejected as being indefinite with regard to the expression “preferably ...”, in other words, a range within a range. In response to the examiner’s comments, the “preferably ...” expression has been deleted from each of claims 4 and 6 and the preferred range made the subject of new dependent claims 8 and 9, respectively. The rejection has thus been overcome.

#### **Response to Rejection Under 35 USC §103(a)**

All of the originally filed claims are rejected as allegedly being unpatentable over patents to Takahashi U.S. 5,908,956 in view of Rona U.S. 3,920,582.

In supporting this rejection it is noted that Takahashi describes a reaction of ketoisophorone (KIP) with acetic anhydride (Ac<sub>2</sub>O) in the presence of a Nafion catalyst, the examiner drawing attention to Example 4 at column 6, lines 1-18. The Official Action also points out that the Takahashi patent discusses a range of catalysts. Indeed, it is quite a range, in fact it covers nearly an entire column of the content of the cited reference, a veritable “laundry list” of possible catalysts. Curiously, as the Official Action admits, methane trisulfonic acid (MTA) is not mentioned; *see* page 4, lines 1 and 2 of the Official Action. Applicants find this deficiency indeed surprising considering the breadth and depth of the types of catalysts disclosed.

The secondary reference to Rona describes catalysts on a solid carrier and includes MTA among those listed. The Official Action then goes on to conclude that it would be “obvious” for one having ordinary skill in the art to select the catalyst from Rona and use it in the process of Takahashi.

While it is quite attractive to select a relevant portion of one reference to combine it with another, one must consider the overall disclosures of both of the applied references. In the case of Rona, all of the catalysts are placed on a solid carrier, usually silica as, for instance, in Examples 2 and 3 (and others as well) as well as claim 3. Accordingly, one having ordinary skill in the art following Rona might only select a relevant catalyst this person would necessarily also

be required to select an appropriate carrier as the Rona reference is all about solid carriers impregnated with a specific type of catalyst. Simply selecting a catalyst by itself without the solid carrier would not be consistent with the teachings of Rona.

Applicants submit that the combination of references amounts to no more than a hindsight reconsideration of the prior art and even if combined would not arrive at the subject matter defined by applicants' claims.

It is curious also that because Takahashi names so many catalysts why was not MTA included? One would think that with such an extensive disclosure the catalyst particularly relevant to the claims of the present application was clearly omitted.

Another point conveniently overlooked is the fact that Rona is concerned with various types of reactions (*see* column 1, lines 10-18) but the use of the Rona-type catalyst is not recited as including a catalyst for acylation reactions. Also, as explained above, if the combination of the two references was fairly considered, one would end up with a MTA catalyst supported on silica used in the Takahashi process and not simply MTA by itself.

These deficiencies in the references (considered individually and in combination) aside, the results provided by the process of the present invention are truly surprisingly. Take for example the Takahashi reference which publishes its best yields as 88% (*see* Example 1) which, following subsequent workup, drops to 60%.

In contrast, the highest yield described in the present invention is at 96.7% (*see* Table 4). One skilled in the art even if he/she stumbled across both references and chose not to include a solid support for the Rona-type catalyst would not expect to achieve significantly improved yields, this is particularly the case with regard to a low molecular weight catalyst and not with the heterogeneous system.

In summary, the combination of references is inappropriate and even if considered for the full extent of their disclosures in combination would not result in the subject matter defined by applicants' claims. Reconsideration and withdrawal of the rejection is requested. Should the examiner require further information, please contact the undersigned.

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Respectfully submitted,

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